Resinglass

Consumption, geometric and mechanical parameters

Coverage table

				M8	M10	M12	M14	M16	M20	M24	M27	M30
Threaded bar diameter	d	mm		8	10	12	14	16	20	24	27	30
Diameter of the bore in concrete	d_0	mm		10	12	14	16	18	24	28	32	35
Anchoring depth	h_{ef}	mm		80	90	100	100	125	175	210	240	280
Number of bores per 1 585 ml-package		n°		109	77	56	45	33	11	8	5	4
Theoretical consumption per bore		ml		4,8	6,8	9,3	11,7	16,1	51,3	72,1	113,1	150,2
			ϕ8	ϕ10	ϕ12	ϕ14	ϕ16	ϕ20	ϕ24	ϕ25	ϕ28	ϕ32
Reinforcing bar diameter	d	mm	8	10	12	14	16	20	24	25	28	32
Diameter of the bore in concrete	d_0	mm	12	14	16	18	20	24	32	32	35	40
Anchoring depth	h_{ef}	mm	90	100	100	125	125	175	240	240	280	320
Number of bores per 1 585 ml-package		n°	61	47	40	28	25	15	5	5	4	3
Theoretical consumption per bore		ml	8,5	11,4	13,2	18,9	21,2	36,2	120,1	113	145,7	217,4

Specifications should be considered as guidelines only.
Data validity is guaranteed only if unopened cartridges are used

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Installation parameters for fastenings on concrete										
Anchoring size (threaded bar)			M8	M10	M12	M16	M20	M24	M27	M30
Threaded bar diameter	$d=d_{nom}$	mm	8	10	12	16	20	24	27	30
Rated bore diameter	d_0	mm	10	12	14	18	22	28	30	35
Effective anchoring depth	$h_{ef,min}$	mm	60	60	70	80	90	96	108	120
	$h_{ef,max}$	mm	160	200	240	320	400	480	540	600
Diameter of the bore in the plate (1)	d_f non-through-bore	mm	9	12	14	18	22	26	30	33
	d_f through-bore	mm	12	14	16	20	24	30	33	40
Required clamping torque	$T_{inst} \leq$	Nm	10	20	40 (2)	60	100	170	250	300
Minimum thickness of the concrete substrate	h_{min}	mm	h_{ef} +30 mm ≥ 100 mm			h_{ef} +2d_0				
Minimum spacing between bars	S_{min}	mm	40	50	60	75	95	115	125	140
Minimum distance from the edge	C_{min}	mm	35	40	45	50	60	65	75	80

(1) For applications under seismic action, the diameter of the through-bore must be a maximum of d1 + 1 mm; alternatively the annular space between the bore and the anchor bar must be filled with grout to the thickness of the plate.
(2) The maximum torque for M12 with class 4.6 steel is 35 Nm

Installation parameters for fastenings on concrete											
Anchoring size (reinforcement bars)			ϕ8	ϕ10	ϕ12	ϕ14	ϕ16	ϕ20	ϕ24	ϕ25	ϕ28	ϕ32
Bar diameter	$d=d_{nom}$	mm	8	10	12	14	16	20	24	25	28	32
Rated bore diameter (1)	d_0	mm	10/12	12/14	14/16	18	20	25	32	32	35	40
Effective anchoring depth	$h_{ef,min}$	mm	60	60	70	75	80	90	96	100	112	128
	$h_{ef,max}$	mm	160	200	240	280	320	400	480	500	560	640
Minimum thickness of the concrete substrate	h_{min}	mm	h_{ef} + 30 mm ≥ 100 mm					h_{ef} +2d_0				
Minimum spacing between bars	S_{min}	mm	40	50	60	70	75	95	120	120	130	150
Minimum distance from the edge	C_{min}	mm	35	40	45	50	50	60	70	70	75	85

(1) Both d_0 rated bore diameters can be used.

Recommended loads on concrete

All recommended loads apply only for single anchoring and for an approximate design, if the following conditions are met:

1. $c \geq 1{,}5 \times h_{ef}$; $s \geq 3{,}0 \times h_{ef}$; $h \geq 2 \times h_{ef}$
2. $\psi_{sus} = 1.0$; percentage of permanent load/total acting load $\leq \psi_{sus}^{0}$ (with reference to the application-specific tables below).
3. cleaning: compressed air cleaning.
4. the recommended loads were calculated using the partial safety factors for the strengths stated in the ETA of the product and with a partial safety factor for actions of $\gamma_f = 1.4$.
5. the partial safety factor for seismic action is $\gamma_1 = 1.0$.

If the above conditions are not met, the loads must be calculated according to EN 1992-4.
The loads given in the following tables refer to a service life of 50 years.

Threaded bars
• Class 8.8 steel
• Concrete - C20 / 25
• Roto-percussion drill and compressed air drill
• Dry and wet concrete

					M8	M10	M12	M16	M20	M24	M27	M30
Combined pull-out and concrete cone failure	40 °C / 24 °C (1) Ψ_{sus}^{0} = 0,60	non cracked	$N_{Rec,stat}$	[KN]	14.4	20.0	27.0	32.7	51.9	71.3	92.6	103.9
		cracked	$N_{Rec,stat}$	[KN]	4,8	6.7	9.9	15.0	25.4	32.3	43.3	51.9
	70 °C / 43 °C (1) Ψ_{sus}^{0} = 0,60	non cracked	$N_{Rec,stat}$	[KN]	4,8	6.7	9.9	13.9	23.6	32.3	43.3	51.9
		cracked	$N_{Rec,stat}$	[KN]	2,4	3.4	4.9	7.5	12.7	16.2	21.6	26.0
Shear strength without lever arm (²) (³)		non cracked	$V_{Rec,stat}$	[KN]	9,7	11.9	16.5	20.8	34.1	48.1	63.5	72.3
		cracked	$V_{Rec,stat}$	[KN]	6,7	8.4	11.7	14.8	24.2	34.0	45.0	51.2
Anchoring depth			h_{ef}	[mm]	80	90	110	125	170	210	250	270
Distance from the edge			c ≥	[mm]	120	135	165	188	255	315	375	405
Distance between bars			s ≥	[mm]	240	270	330	375	510	630	750	810

Reinforcing bars • B450C steel • Concrete - C20 / 25 • Roto-percussion drill and compressed air drill • Dry and wet concrete					ϕ8	ϕ10	ϕ12	ϕ14	ϕ16	ϕ20	ϕ24	ϕ25	ϕ28	ϕ32
Combined pull-out and concrete cone failure	40 °C / 24 °C (1) Ψ_{sus}^0 = 0,60	non cracked	$N_{Rec,stat}$	[KN]	9.6	13.5	19.3	20.6	23.4	37.1	49.1	50.9	66.1	74.2
		cracked	$N_{Rec,stat}$	[KN]	4.1	6.7	9.9	11.2	13.9	21.8	31.5	33.7	41.1	50.8
	70 °C / 43 °C (1) Ψ_{sus}^0 = 0,60	non cracked	$N_{Rec,stat}$	[KN]	11.5	16.2	23.7	28.9	32.7	51.9	68.8	71.3	92.6	103.9
		cracked	$N_{Rec,stat}$	[KN]	1.7	2.4	3.5	4.3	5.3	9.1	13.1	14.0	18.7	23.1
Shear strength without lever arm (2) (3)		non cracked	$V_{Rec,stat}$	[KN]	6.7	10.5	14.8	18.8	20.8	34.1	46.4	48.4	63.8	73.0
		cracked	$V_{Rec,stat}$	[KN]	4.8	6.7	9.9	12.0	14.8	24.2	32.8	34.3	45.2	51.7
Anchoring depth			h_{ef}	[mm]	80	90	110	115	125	170	205	210	250	270
Distance from the edge			c ≥	[mm]	120	135	165	173	188	155	308	315	375	405
Distance between bars			s ≥	[mm]	240	270	330	345	375	510	615	630	750	810

Notes:
(1) Short-term temperature / Long-term temperature.
(2) Shear loads refer to the specified temperature ranges.
(3) The space between the anchoring bar and the bore in the plate must be filled with resin

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